



4-14-2005

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Linda L. Webster

University of the Pacific, lwebster@pacific.edu

Rachelle K. Hackett

University of the Pacific, rhackett@pacific.edu

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Recommended Citation

Webster, Linda L. and Hackett, Rachelle K., "Differences between resolved versus unresolved adolescents on selected measures of behavior and cognitive processes" (2005). *Benerd School of Education Faculty Presentations*. 216.

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Differences Between Resolved Versus Unresolved Adolescents on Selected Measures of Behavior and Cognitive Processes

Purpose:

Child maltreatment has been consistently associated in the research literature with disorganized attachment (van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Much of the research on child maltreatment and attachment, however, has focused on infants and children, and little research has investigated adolescents, particularly with measures utilizing analysis of defensive processes. Individuals categorized as *unresolved/disorganized* have usually experienced a death of an attachment figure or have experienced the attachment figure to behave in frightening or abusive ways, as is often the case with maltreated youngsters. This has been associated with serious adolescent psychopathology (Allen, Hauser, & Borman-Spurrell, 1996). This study sought to investigate the relationship between unresolved attachment and behavior in a maltreatment sample in order to better understand the impact of the presence of unresolved segregated systems on behavior ratings as perceived by primary caregivers and the adolescents themselves. This study also sought to gain a better understanding of the potential impact of unresolved attachment status on executive cognitive processes thought to be implicated in attachment processes.

Theoretical Perspective:

Bowlby (1969; 1982) hypothesized that individuals construct mental representations of relationships based upon actual experiences with a primary caregiver. These “internal working models” organize behavior, thought, memory, and defenses with regard to activation of the attachment system. Under optimal conditions of responsive and sensitive caregiving, the child’s attachment system is flexibly integrated and organized in such a way that allows them to seek comfort when they need it, and pursue exploration of the environment when threats in the environment are minimal. Under conditions associated with neglect, rejection, and abuse, the child develops defensive processes that serve to keep painful feelings and thoughts from consciousness. Bowlby delineated three distinct forms of defensive exclusion – deactivation, cognitive disconnection, and segregated systems. Bowlby conceptualized deactivation as a process of blocking or reducing awareness of cues that might activate the attachment system. The child is thus able to effectively “shut down” the system from being activated and avoids the possibility of experiencing rejection or disappointment. This type of defensive process is typically associated with children classified as “avoidant.” In the defense of cognitive disconnection, the child is aware of attachment-related feelings, but the defensive system employs a number of strategies to distract or “disconnect” the individual from the source of the activation of the attachment system. This defensive process is typical of “ambivalent” children. Finally, Bowlby postulated that segregated systems were the result of complete exclusion of attachment feelings and memories.

Bowlby (1980) postulated the existence of segregated systems that were produced as a form of defensive exclusion to keep trauma-related attachment memories and

emotions in a separate mental model. The function of this defense is to attempt to keep these painful memories from consciousness, but this cannot occur indefinitely (George, West, & Pettem, 1999). When the individual's attachment system is intensely activated, the segregated system fails and the individual's thinking and behavior become disorganized. Main and Goldwyn (1985/1991/1994) define lack of resolution, or an unresolved state of mind, as a form of dysregulation of segregated attachment systems. Bowlby (1980) linked segregated systems to pathological mourning and mental health risk. On the other hand, individuals who are *resolved*, "employ mental strategies that integrate or contain segregated material, thus protecting the individual from becoming overwhelmed, disorganized, dysregulated, or disoriented" (George, West, & Pettem, 1997, p. 71). There is evidence that disorganized attachment (the unresolved corollary in children) places the child at significant risk for maladaptive outcomes (Carlson, 1998; Lyons-Ruth, Alpern, & Rapacholi, 1993; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Moss, Rousseau, Parent, St-Laurent, & Saintonge, 1998; Solomon, George, & DeJong, 1995) and makes more imperative that therapeutic interventions aimed at improving the interactions of the caregiver with the foster child are developed and implemented.

Bowlby (1977) predicted that early attachment experiences and the representations of those experiences affect relationships, self-esteem, and self-regulation of emotion and behavior. There is a growing body of work that links externalizing problems to inadequate affective regulations, including inadequate ability to inhibit behavior and to control attention and cognitive processing (Olson, Schilling, & Bates, 1999; Oosterlaan & Sergeant, 1996; Rothbart, Posner, & Hershey, 1995). For example, Kobak and Sceery (1988) found an association between adolescent attachment and strategies of affect regulation, and Adam, Sheldon-Keller, & West (1996) found that cognitive disorganization may mediate between traumatic experience and suicidal behavior in clinical adolescents.

Methods & Data Sources:

Participants

Participants were 22 adolescents with a history of maltreatment who were referred for a psychological evaluation. The mean age was 13.98 (SD= 1.69) years old (Min= 11.6, Max= 17.9). Seventy-seven percent were female and 23 percent were male. The sample consisted of 68.2 percent African American (n=15); 27.3 percent Caucasian (n=6); and 4.5 percent Hispanic (n=1). The majority of these adolescents had experienced neglect (76.2%) with additional cases (9.5%) having experienced both neglect and abuse.

Classification Procedure

The adolescents were administered the Adult Attachment Projective developed by George, West, & Pettem (1997), as one part of a larger psychological evaluation. (Permission was obtained to use this procedure as a component of the larger assessment in order to provide useful information regarding the child's attachment status.) This classification system has been validated with the Adult Attachment Interview (AAI) with overall classification agreement at 79% (kappa = .79, $p < .0001$). Interjudge reliability is kappa = .84 ($p < .0001$), and test-retest reliability is kappa = .79 ($p < .0001$) (George &

West, in press). The primary author had achieved reliability with George and West on over 90 cases, following training on the procedure and coding.

Measures

The primary caregivers of these adolescents (typically the foster mother) completed the Parent Rating Scales of the Behavioral Assessment System for Children (Reynolds & Kamphaus, 1998). In addition, the adolescent was invited to provide self reports. The scales are listed within the tables reported in the results section. In addition to the BASC's widespread use among clinicians and educators, the reliabilities for all scales are reported to be .85 or higher for test-retest, and in the mid to upper .70s on the internal consistency measures.

The adolescents were also administered the Woodcock-Johnson Third Edition Tests of Cognitive Ability (Woodcock, McGrew, & Mather, 2001). The WJ-III is a well-researched and well-respected measure of cognitive abilities. Reliabilities for the clusters of interest in this study range from .92 to .96 (Mather & Woodcock, 2001).

Results

Due to the exploratory nature of this study and the relatively small sample size involved, for all statistical analyses, we conducted one-tailed tests and adopted an alpha of .05. It is recognized that this may lead to falsely rejecting the null hypotheses, yet it will also help to detect trends that can later be subject to replication as more cases are added to the clinical database over time.

Preliminary Analyses

To rule out selection threats and allow for clearer conclusions about differences between resolved ($n=12$) versus unresolved adolescents ($n=10$), t-tests were used to compare the independent samples with respect to age, age at removal, the number of placements, and the length of time in the current placement. Similarly, chi square tests were used to compare the groups with respect to ethnicity, sex, the reason for removal, and level of care. No evidence was found to suggest the groups varied on any of these background variables. However, it should be noted that the small sample size limits the power to detect differences and that we cannot completely rule out selection as a threat.

Parent Ratings of Maltreated Adolescents

Results indicated significant differences for the BASC Parent Rating Form for Aggression ($t = - 4.20, p < .01$); Depression ($t = 3.31, p < .001$); Atypicality ($t = - 1.75, p < .05$); Attention Problems ($t = - 2.14, p < .05$); Social Skills ($t = + 2.30, p < .01$); Externalizing Problems ($t = - 2.52, p < .01$); and the Behavior Symptoms Index ($t = - 3.45, p < .01$).

Table 1. Comparison of parent ratings on the BASC for resolved versus unresolved maltreated adolescents.

BASC Parent Rating Scale	Resolved			Unresolved			<i>t</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
Aggression	12	56.58	11.13	10	81.50	15.75	- 4.20 **
Conduct Problems	12	88.00	18.61	10	85.00	16.86	+ .393
Anxiety	12	54.83	12.50	10	58.00	12.75	- .587
Depression	12	54.58	9.15	10	71.90	15.15	- 3.31 **
Somatization	12	51.25	15.63	10	47.2	7.71	+ .745
Atypicality	12	62.4	13.24	10	73.9	17.53	- 1.75 *
Withdrawal	12	55.00	11.06	10	58.6	19.85	- .538
Attention Problems	12	64.83	9.41	10	73.8	10.19	- 2.14 *
Social Skills	12	38.75	7.89	10	30.60	8.71	+ 2.30 **
Leadership	12	36.16	5.15	10	33.7	7.45	+ .916
Externalizing Problems	11	70.91	12.98	10	88.5	18.8	- 2.52 **
Internalizing Problems	11	55.90	10.63	10	61.1	8.72	- 1.21
Behavioral Symptoms Index	11	62.55	10.25	10	82.1	15.03	- 3.45 **
Adaptive Skills	11	36.27	6.15	10	30.50	8.23	- 1.83 *

* $p < .05$ ** $p < .01$

Maltreated Adolescent Self-Reports

Results indicated significant differences for the BASC Self Report Form for Attitude to Teachers ($t = - 2.01, p < .05$); Locus of Control ($t = - 1.80, p < .05$); Anxiety ($t = - 2.12, p < .05$); Relationships With Parents ($t = + 1.97, p < .05$); and Personal Adjustment ($t = + 2.35, p < .01$) (see table 2).

Table 2. Comparison of adolescent's self reports on the BASC for resolved versus unresolved adolescents

BASC Adolescent Self-Report Scale	Resolved			Unresolved			<i>t</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
Attitude toward school	12	53.42	10.16	10	51.6	9.49	+ .430
Attitude toward teachers	12	52.41	9.5	10	61.4	11.52	- 2.01 *
Sensation Seeking	12	56.63	6.55	10	54.70	13.96	+ .413
Atypicality	12	49.67	11.22	10	56.6	11.74	- 1.41
Locus of control	12	53.41	7.52	10	60.10	9.90	- 1.80*
Somatization	11	48.55	9.29	10	52.60	11.72	- .883
Social stress	12	50.92	9.52	10	55.00	9.53	- 1.00
Anxiety	12	46.5	11.10	10	55.20	7.57	- 2.12*
Depression	12	51.17	7.36	10	56.00	9.70	- 1.33
Sense of Inadequacy	12	53.75	11.05	10	59.50	9.74	- 1.281
Relationship with parents	12	48.75	10.07	10	39.50	11.95	+ 1.97*
Interpersonal relationships	12	54.75	2.49	10	47.60	12.74	+ 1.75

Self esteem	12	50.42	9.13	10	46.60	12.12	+ .842
Self reliance	12	53.91	5.26	10	48.20	15.23	+1.132
School Maladjustment	11	55.45	6.95	10	57.30	11.75	- .433
Clinical Maladjustment	11	50.45	10.22	10	57.10	10.05	- 1.50
Personal Adjustment	11	52.00	6.05	10	43.90	9.49	+ 2.35**
Emotional Symptoms	11	50.00	8.35	10	56.60	10.50	- 1.60

* p<. 05 ** p< .01

Woodcock-Johnson Tests of Cognitive Abilities

Results indicated significant differences for Cognitive Efficiency ($t = + 2.94, p < .01$); Cognitive Fluency ($t = + 1.837, p < .05$); Broad Attention ($t = + 2.94, p < .01$); and Working Memory ($t = + 2.92, p < .01$).

Table 3. Comparison of Woodcock-Johnson scores for resolved versus unresolved adolescents

Woodcock-Johnson		<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Cognitive Efficiency	Resolved	12	100.17	13.54	+ 2.94**
	Unresolved	9	83.22	12.37	
Cognitive Fluency	Resolved	12	103.66	13.24	+ 1.837*
	Unresolved	9	89.22	22.67	
Broad Attention	Resolved	12	96.58	14.83	+ 2.94**
	Unresolved	9	78.89	11.78	
Executive Processes	Resolved	12	96.33	13.43	+ 1.56
	Unresolved	9	88.33	8.51	
Working Memory	Resolved	12	96.00	14.89	+ 2.92**
	Unresolved	9	78.44	11.66	

* p<. 05 ** p< .01

Educational & Scientific Importance of Study:

This exploratory investigation sought to gain a better understanding of the mental representations of attachment in maltreated adolescents, and whether or how unresolved attachment representations are related to behavior and cognitive processes of attention and memory.

The results of this study found that parent ratings on five BASC subscales (aggression, depression, atypicality, attention problems, and social skills) were found to differ, on average, between the groups of resolved versus unresolved adolescents. In particular, primary caregivers of maltreated, but resolved adolescents rated them lower than did the primary caregivers of maltreated, unresolved adolescents in aggression, depression, atypicality, and attention problems. This is consistent with other research that indicates a relationship between disorganization and avoidance and aggression and atypicality in younger children (Solomon, George, & DeJong, 1995), and suggests that the finding may extend to adolescents as well. Adolescent self-reports were found to differ, on average, between the groups of resolved versus unresolved on four BASC subscales (Attitude to Teachers, Locus of Control, Anxiety, and Relationship with

Parents) and one BASC composite (Personal Adjustment). The Attitude to Teachers scale assesses the individual's perception of teachers as being uncaring, unfair, or unmotivated to help their students. A low score indicates that teachers are held in high regard, while high scores are indicative of a pervasive dissatisfaction with teachers. The results of this study indicate that unresolved adolescents, as a group, indicate a pervasive dissatisfaction with teachers. Unresolved mental representations of attachment are conceptualized and have been linked empirically to pathological mourning occasioned by death, abuse, or other forms of trauma (Bowlby, 1980). Individuals are unresolved when these experiences have not been reworked, and therefore, have not been transformed and re-integrated into the individual's current mental representation of attachment figures and the self. In the absence of integration and resolution, activation of the attachment system appears to lead to continued experiences of failed protection, perceived threat, or extreme mental distress. Unresolved individuals continue to be "haunted" by feelings of abandonment, helplessness, vulnerability, threat, and a deep sense of being unprotected or unworthy of being protected. This mental representation could be extended to teachers in the classroom as well since they often provide a caregiving function in the classroom context. School counselors and psychologists can facilitate an understanding of the developmental process of attachment through consultation with teachers and parents and provide appropriate interventions for these high-risk adolescents – targeting areas identified in this study.

The results of this study also found that adolescents differed, on average, between the groups of resolved versus unresolved on measures of cognitive processes from the Woodcock-Johnson Tests of Cognitive Abilities (Broad Attention, Cognitive Efficiency, Cognitive Fluency, and Working Memory). Attention can be defined as a "cognitive mechanism that selects relevant environmental information and controls task performance in support of an individual's goal" (Yantis, 1994, p. 146). Attention is a complex and multifaceted construct by which an individual focuses on certain stimuli for information processing. These facets include focused or selective attention, vigilance or sustained attention, divided attention, and attentional capacity. The Executive Processes cluster includes three aspects of executive functioning: strategic planning, proactive interference control, and the ability to repeatedly shift one's mental set. Planning is considered to be "necessary for appropriate, socially responsible, and effective self-serving ... conduct" (Lezak, 1995, p. 650). It is characterized by "forward thinking," the generation of alternatives, the weighing and making of choices, and the development of a framework or structure that provides direction to the completion of a plan. Main, van Ijzendoorn, & Hesse (1993) have argued that individuals who are unresolved for trauma or loss evidence behavior that indicates that attention, working memory, and consciousness are being overwhelmed, however, this is typically only when the attachment system is activated. The results of this study suggest that these cognitive processes may be chronically impaired as long as the individual remains unresolved, regardless of whether the attachment system is activated or not. This may qualify some adolescents for classroom accommodations (such as additional time to complete tests and assignments) based upon section 504 of the Americans with Disabilities Act.

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